GUROVICH, S.I.; GASANOVA, V.P.

Multiple ossification of muscles, connective tissue and the areolar layer in a 13-year-old boy. Pediatriia 39 no.4:79-81 Jl-Ag '56.
(MLRA 9:12)

1. Iz Respublikanskogo detskogo kostnotuberkuleznogo sanatoriya imeni V.I.Lenina (Orekhovaya roshcha) Uzbekskoy SSR (glavnyy vrach Yu.Yu.Yusupov, konsul'tant - dotsent S.L.Firer)
(OSSIFICATION, in inf. and child
of musc., connective tissue & reticular layer in 13-year old boy)
(MUSCLES, dis.
ossification in 13-year old boy)
(SKIN DISEASES, case reports
ossification of reticular layer in 13-year old boy)
(CONNECTIVE TISSUE, dis.
ossification in 13-year old boy)

L 42408-65 EWT(1)/EWP(m)/EPA(sp)-2/EPF(n)-2/EWG(v)/EWG(m)/EPR/EPA(w)-2/T-2/
EWA(m)-2 Pz-6/Po-4/Pd-1/Pab-10/Pe-5/Ps-4/Pi-4 IJP(c) WW/AT
S/0040/65/029/001/0018/0025
ACCESSION NR: AP5006252

AUTHOR: Gurovich, T. Ts. (Moscow); Stanyukovich, K. P. (Moscow)

TITLE: Concerning the application of general variational principles to the relativistic mechanics of an ideal fluid

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1965, 18-25

TOPIC TAGS: relativistic magnetohydrodynamics, aerodynamics, plasma physics, astrophysics, variational calculus, space research

ABSTRACT: The starting point for the discussion here of the various examples for the motion of a relativistic medium in the special theory of relativity and for spherically symmetrical motion in a Schwarzschild gravitational field is the following equation:

$$2\frac{\omega^2}{c^2}(S_n S^n)\left(S_l^{\,l} + S^l\frac{\partial \ln \sqrt{-g}}{\partial x^l}\right) + \left(1-\frac{\omega^2}{c^2}\right)S^l\left(\frac{\partial S_n}{\partial x^l}S^n + \frac{\partial S^n}{\partial x^l}S_n\right) = 0 \qquad (0.10)$$

Equation (0.10) is also convenient to use in the absence of a gravitational field, if the calculations are carried out in an arbitrary curvilinear coordinate system. No difficulties are encountered in the solution of the equations describing the

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motion of a gas by the method of characteristics in a Schwarzschild field. The steps leading to equation (0.10) are as follows: The Lagrangian of the electromagnetic field is taken in the familiar form (L. D. Landau and Ye. M. Lifshits, *Teoriya polya*. Fizmatgiz, 1960):

$$L_e = -F_{ik}F^{ik}/16\pi, \qquad F_{ik} = \partial A_k/\partial x^i - \partial A_i/\partial x^k \qquad (0.1)$$

where $F_{ik}$ and $A_i$ are the tensor and four-potential, respectively, of the electromagnetic field. The Lagrangian of a continuous medium in the case of isentropic quasi-potential flow is:

$$L_m = p = (w - E)/v = [c\sqrt{-g^{ik}S_iS_k} - E]/v \qquad (0.2)$$

(K. P. Stanyukovich, "Lagrangian of a continuous medium in Riemannian space," *Doklady AN SSSR*, 1964, v. 154, no. 2), where *S*-the action for matter, *E*-the mass density of energy, *v*-specific volume, *p*-the pressure, *w*-heat content, $g_{ik}$-the components of the metric tensor, *c*-the velocity of light. Also,

$$S_i = \partial S/\partial x^i, \qquad cS_i = wu_i \qquad (0.3)$$

where $u_i$ is the four-component velocity. With the Lagrangian for a continuous medium established, the equations of motion are similarly sought also for the field:

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ACCESSION NR: AP5006252

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$$\frac{\partial}{\partial S}(\sqrt{-g}L_m) - \frac{\partial}{\partial x^k}\frac{\partial(\sqrt{-g}L_m)}{\partial S_k} = 0 \qquad (0.4)$$

where $g$ is the determinant of the metric tensor $g_{ik}$. In the case of the presence of an electromagnetic field, calculation of the derivatives is followed by substitution of $\partial S_i$ by $wu_i + (e/m)A_i$, where $(e/m)$ is the mean ratio of charge to particle mass. In the absence of an electromagnetic field, expression (0.2) is substituted into (0.4), resulting in the following equations of discontinuity:

$$\frac{\partial}{\partial x^k}\frac{\sqrt{-g}S^k}{w} = 0 \quad \text{or} \quad \frac{\partial}{\partial x^k}\frac{\sqrt{-g}u^k}{v} = 0 \qquad (0.5)$$

Since $v \sim (w - \omega)^{-1/(k-1)}$ for $pv^k = \text{const}$, the equation (0.2) is written in the form

$$L_m = p = \text{const}\left[-\omega + \sqrt{-g^{ik}S_iS_k}\right]^{\frac{k}{k-1}} \qquad (0.6)$$

From (0.4) a similarly more complex equation is obtained:

$$\frac{\partial}{\partial x^n}\left[\frac{\sqrt{-g}S^n}{\sqrt{-S_iS^i}}\left(\sqrt{-S_iS^i} - \omega\right)^{\frac{1}{k-1}}\right] = 0 \qquad (0.7)$$

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ACCESSION NR: AP5006252

Instead of (0.7), however, the equation of sound is more convenient to employ. To obtain the latter expression, equations (0.5) are written in the form

$$\frac{S^n}{vw}\frac{\partial \ln \sqrt{-g}}{\partial x^n}+\frac{\partial (S^n/vw)}{\partial x^n}=0 \qquad (0.8)$$

Since $\frac{d \ln w}{d \ln v}=-\frac{w^2}{c^2}$ (0.9)

where $w$ is the relativistic speed of sound, the equation (0.8) gives finally the above equation (0.10). The equations of motion of a continuous conducting medium in specific electromagnetic and gravitational fields are obtainable in very elementary fashion by variation of the corresponding Lagrangian equations. The variational principle leads to scalar second-order equations for the analysis of the motion of a medium, significantly more advantageous than the analysis of the usual equations of conservation of momentum, mass, and energy. Orig. art. has: 56 formulas.

ASSOCIATION: none

Card 4/5

SHOSTAK,SI.; GUROVICH,V.I.

Introducing progressive practices in industry. Leg.prom. 15 no.6:50-51 Je '55. (MLRA 8:8)
(Ukraine--Manufactures)

SHOSTAK, S.I.; GUROVICH, V.I.

The exchange of progressive technical practices should get wider development. Leg. prom. 15 no.11:41-43 N '55. (MIRA 9:2)
(Russia--Manufactures)

[illegible], V. S.

Gravitational field of rotating [illegible] configurations. Astron. zhur. 42 no.5:974-976 S-O '65. (MIRA 18:10)

GUROVICH, V.TS.; ZHEYENBAYEV, Zh.; ZHIDKOV, O.P.

Polarization of helium atoms by optical pumping and its
determination from the varying intensity of light
transmission. Izv. AN Kir. SSR. Ser. est. i tekh. nauk
5 no.6:129-134 '63. (MIRA 17:5)

LEONOV, Mikhail Yakovlevich; RUSINKO, Konstantin Nikolayevich;
SHVAYKO, Nikolay Yur'yevich; GUROVICH, Viktor
Tsalevich; RYAZIN, P.A., otv. red.

[Problems of strength and elasticity] Voprosy prochnosti i plastichnosti. Frunze, Izd-vo AN Kirg. SSR, 1964.
81 p. (MIRA 17:8)

1. AN Kirgizskoy SSR, Frunze. Institut fiziki, matematiki i mekhaniki.

GUROVICH, V.TS. (Moskva); STANYUKOVICH, K.P. (Moskva)

Application of general variational principles to the relativistic mechanics of an ideal liquid. Prikl. mat. i mekh. 29 no.1:18-25 Ja-F '65. (MIRA 18:4)

GUROVICH, V.TS.; GUSEYNOV, O.Kh.

Rotation of ultradense configurations. Pis'. v red. Zhur. eksper. i teoret.fiz. 2 no.3:113-116 Ag '65. (MIRA 18:12)

1. Submitted June 3, 1965.

L 10765-66 EWT(1)/EWP(m)/FS(v)-3/T/EWA(m)-2 IJP(c) GW

ACC NR: AP5028907

SOURCE CODE: UR/0020/65/165/003/0510/0513

AUTHORS: Stanyukovich, K. P.; Sharshekeyev, O.; Gurovich, V. Ts.
55 44 55 44 55 44

ORG: none

21,44,55 21,44,55

TITLE: Self-similar motion of relativistic gas in the general theory of relativity for a case of point symmetry

SOURCE: AN SSSR. Doklady, v. 165, no. 3, 1965, 510-513

TOPIC TAGS: relativistic gas, astrophysics, special theory of relativity, general theory of relativity, isentropic flow

ABSTRACT: Starting with the Einstein equations $R_i^k - {}^1/_2\delta_i^k R = \varkappa T_i^k$, the following set of adiabatic motion equation is obtained for a relativistic gas

12,

$$\frac{d(wu_i)}{ds} + \frac{\partial w}{\partial x^i} = \frac{w}{2} u^k u^l \frac{\partial g_{kl}}{\partial x^i} + T \frac{\partial \sigma}{\partial x^i},$$

$$\frac{\partial}{\partial x^k}\left(\frac{u^k}{V}\sqrt{-g}\right) = 0, \quad \frac{d\sigma}{ds} = 0$$

where w and $\sigma$ are the energy content and the entropy, respectively. These can be expressed through the pressure P and specific volume V or

$$w = \frac{k}{k-1} PV + \alpha c^2, \quad PV^k = \sigma.$$

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UDC: 532.501.11

L 10765-66

ACC NR: AP5028907

The above equations are then written in logarithmic form and are shown to differ from the special theory of relativity by the presence of the two functions $\lambda$ and $\nu$, $d\tau_0 = e^{(\lambda-\nu)/2}dt$. The self-similar solution is obtained through the functions

$$\rho = \xi_1(z), \quad 1/V = t^{m_1}\xi_2(z), \quad P = t^{m_2}\xi_3(z),$$

$$e^{\lambda} = t^{m_3}\xi_4(z), \quad e^{\nu} = t^{m_4}\xi_5(z), \quad z = r/t,$$

which lead to a set of five ordinary differential equations in the unknowns $\xi_1 - \xi_5$. It is shown that, in general, the self-similar solution does not admit of an isentropic flow. Finally, an ultrarelativistic flow is considered with the similarity functions

$$a = \xi_1(z), \quad 1/V = t^{m_1}\xi_2(z), \quad P = t^{m_2}\xi_3(z),$$

$$e^{\lambda} = t^{m_3}\xi_4(z), \quad e^{\nu} = t^{m_4}\xi_5(z), \quad z = r/t.$$

The special case of the motion of a dust type particle in a gravitational field is considered where P = 0 and a = a($\lambda$). The solution gives the following results

$$\rho = 1/V = 1/r^2[c_1 - \varkappa c^2 F(z)],$$

$$z = \frac{e^{-\lambda}}{2}, \quad F(z) = \int \frac{e^{-z}\,dz}{(1-2z)}.$$

This paper was presented by academician L. I. Sedov on 9 April 1965. Orig. art. has: 18 equations.

SUB CODE: 20, 03/ SUBM DATE: 04Apr65/ ORIG REF: 006

Card 2/2

L 14853-66 EWT(1)/FBD IJP(c) GW

ACC NR: AP6001726 SOURCE CODE: UR/0020/65/165/004/0806/0808

AUTHORS: Stanyukovich, K. P.; Gurovich, V. Ts.

ORG: none

61

B

TITLE: Ultrarelativistic escape of gas in a gravitational field [21,44,55]

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 806-808

TOPIC TAGS: general relativity, light velocity, radio astronomy, galactic radiation, gas mechanics

ABSTRACT: The authors consider the motion of a gas at velocity close to that of light from the point of view of general relativity, in view of interest that attaches to this problem in connection with observations of quasars[55] and explosions of galactic cores. To this end they modify the equations of motion and continuity previously obtained for the special relativity theory,[44] but to simplify the problem they assume the initial distribution of the[55] pressure and the velocity (the Cauchy problem) to the same form as used for self similar motion of ordinary gas. Although the final equation obtained cannot be solved analyt-

Card 1/2 UDC: 530.12:531.51

L 14853-66

ACC NR: AP6001726

O

ically, it can be deduced, by examining the escape of an ultrarelativistic gas in an external Schwarzschild field, (scattering of the shell of a relativistic star after emergence of a shock wave traveling from the center to the surface), that the ultrarelativistic escape of initially homogeneous gas sphere behaves essentially like the motion of a gas in an external Schwarzschild field of a specific gravitational radius. This report was presented by Academician L. I. Sedov. Orig. art. has: 17 formulas.

SUB CODE: 20/, 03/ SUBM DATE: 11Jun65/ ORIG REF: 006/

Card 2/2

L 10705-67 EWT(l) GW

ACC NR: AR6035037 SOURCE CODE: UR/0058/66/000/008/B012/B012

57

AUTHOR: Gurovich, V. Ts.

TITLE: Possibilities of Cerenkov emission in a gravitation field

SOURCE: Ref. zh. Fizika, Abs. 8B132

REF SOURCE: Tr. po teorii polya. Mosk. in-t radioelektron. i gorn. elektromekhan, vyp. 2, 1965, 120-121

TOPIC TAGS: gravitation field, electrodynamics, Maxwell equation, charged particle, photon, Cerenkov emission, Cerenkov radiation, photon emission

ABSTRACT: It is shown that the equations of electrodynamics in a static gravitation field make it possible to determine (by analogy with the Maxwell equations in a material medium) the "refractive index" of the gravitational field $n = (g_{00})^{1/2}$. Since, for the static spherical-symmetrical gravitation field in vacuum $n > 1$, the charged particle with a velocity of $v > c/n$ emits during its motion by inertia a photon. An estimate is given for the intensity of such solar radiation. V. Zakharov. [Translation of abstract]

SUB CODE: 20/

Card 1/1 gm

L 17547-66 EWT(1) GW
ACC NR: AP6003826 SOURCE CODE: UR/0386/65/002/003/0113/0116

AUTHORS: Gurovich, V. Ts.; Guseynov, O. Kh.

22
19
B

ORG: none

TITLE: Rotation of superdense configurations

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 3, 1965, 113-116

TOPIC TAGS: cosmology, star, stellar evolution

ABSTRACT: The authors examine the influence of rotation on the parameters of statistically superdense stars with average density greater than $10^{12}$ g/cm$^3$ (limiting mass M = 1.55 solar masses and radius R = 8.92 km). The configuration parameters are estimated, in view of the computational difficulties involved in the use of Newton's or Einstein's theory, for the following simplified model: it is assumed that the star rotation to be such that deviation from sphericity of the hyperon core, which has 0.93 -- 0.97 of the mass of the

Card 1/2

2

L 17547-66

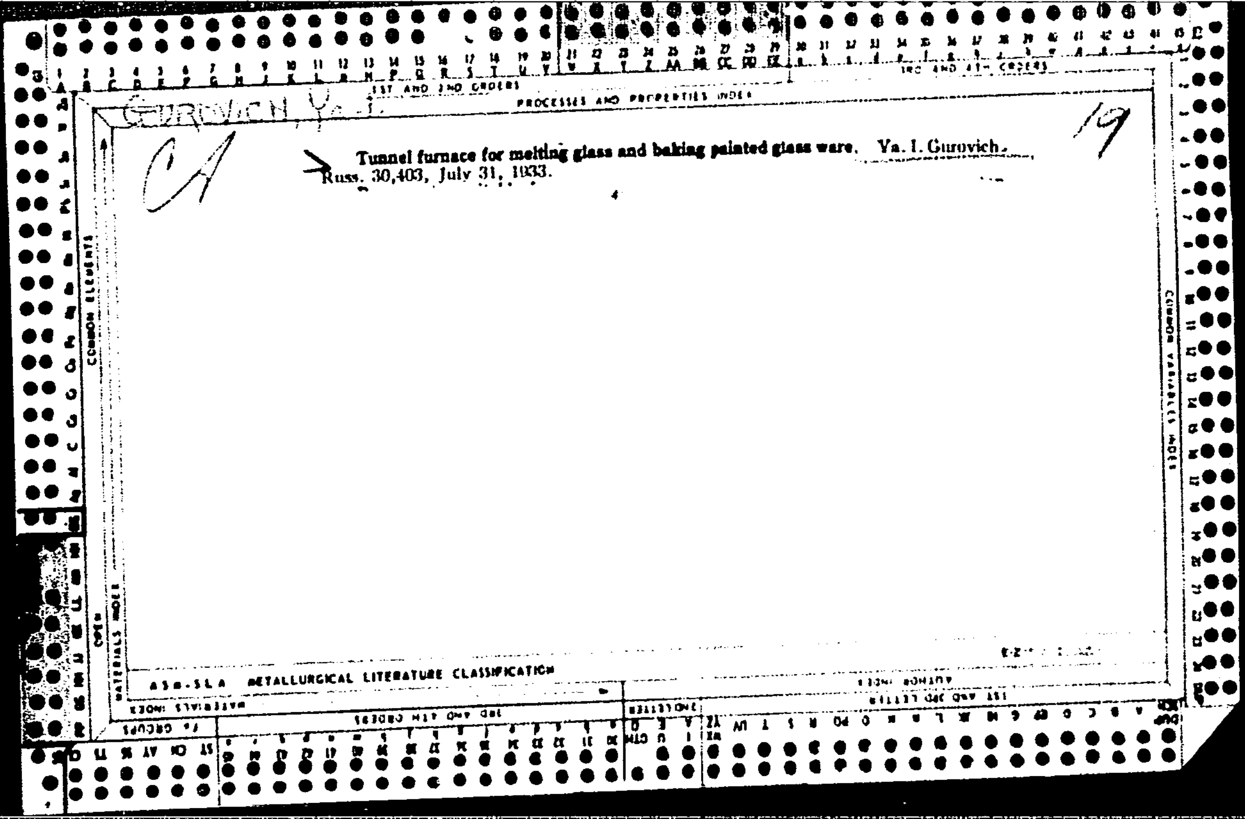
ACC NR: AP6003826

3

entire configuration, can be neglected. Under this assumption the shell of the hyperon star rotates in an external gravitational field produced by a spherically-symmetrical rotating core. Calculations show that the rotation of the configuration core leads to the appearance of a new force which partially offsets the centrifugal force. This leads to an increase in the deformation of the configuration if the core and the shell rotate in opposite directions. The shell deformation is found to be 0.127 and 0.176 on the pole and on the equator, respectively, if the configuration core rotates, and 0.254 on the equator if the core does not rotate. Author thanks A. G. Doroshkevich, Ya. B. Zel'dovich, and I. D. Novikov for a discussion of the results. Orig. art. has: 5 formulas.

SUB CODE: 03 SUBM DATE: 03Jun65/ ORIG REF: 004/

Card 2/2


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
COMMON ELEMENTS
MATERIALS INDEX
COMMON VARIABLES INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GUROVICH Ya. I.

CA

19

Tunnel furnace for melting glass and baking painted glass ware. Ya. I. Gurovich. Russ. 30,403, July 31, 1933.

GUROVICH, Ya. I.

"Using Spongiolithe Clays for Making Glassware." Cand Tech Sci, Kiev Polytechnic Inst, Kiev, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

Gurovich, Ya. I.

USSR/ Chemistry - Chemical technology

| | |
|---|---|
| Card 1/1 | Pub. 116 - 20/29 |
| **Authors** : | Alentyev, A. A., and Gurovich, Ya. I. |
| **Title** : | Application of magnesium hydroxide from natural brine solutions for the derivation of high-magnesia glass |
| **Periodical** : | Ukr. khim. zhur. 21/6, 778-782, Dec 1955 |
| **Abstract** : | It is shown that magnesium hydroxide obtained from natural solutions (brine) represents a highly valuable raw material for the manufacture of magnesia-base refractories and can also be used in other branches of industry. It was also confirmed experimentally that synthetic magnesium hydroxide, obtained from Crimean natural brine, contains a small amount of impurities and can be successfully used in the manufacture of glass products of higher chemical and thermal strength. Eight USSR references (1938-1951). |
| **Institution** : | Kiev Polytechnik Inst. |
| **Submitted** : | May 28, 1955 |

SOV/81-59-9-32058

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 9, p 354 (USSR)

AUTHORS: Gurovich, Ya.I., Grankovskiy, I.G.

TITLE: Determination of the Sintering Temperature and the Temperature Range of the Sintering of Ceramic Masses From the Change in Electric Conductivity

PERIODICAL: V sb.: Issled. i ispol'zovaniye glin L'vov. L'vovsk. un-t, 1958, pp 403 - 404 , 830 (English summary)

ABSTRACT: An electrical method has been described for determining the sintering temperature and the temperature range of the sintering of clays and ceramic masses, based on the measurement of electric conductivity. The latter increases in proportion to the temperature rise in connection with the formation of a liquid (glass-like) phase in the materials indicated. A schematic drawing of an experimental installation is presented, by means of which the intensity of the current is measured which passes through a sample of standard dimensions (a cylinder 100 mm long and

Card 1/2

SOV/81-59-9-32058

Determination of the Sintering Temperature and the Temperature Range of the Sintering of Ceramic Masses From the Change in Electric Conductivity

11.2 mm in diameter). An increase in the current intensity at constant tension on the electrodes characterizes the increase in the electric conductivity of the sample. The method recommended for determining the sintering temperature and the temperature range of the sintering of ceramic masses needs no more than 1.5 hours.

G. Maslennikova

Card 2/2

ALENT'YEV, A. A., doktor tekhn. nauk; GUROVICH, Ya. I., kand. tekhn. nauk;
GROSHEVA, V. M., inzh.

Investigating properties of a construction material based on silicon carbide. Mashinostroenie no.5:86-87 S-O '62.
(MIRA 16:1)

1. Kiyevskiy politekhnicheskiy institut.

(Materials—Testing) (Silicon carbide)

L 52115-65 EWT(m)/EWP(i)/EWP(b)/EWP(e) Pq-4 WH

ACCESSION NR: AP5015360

UR/0286/65/000/009/0111/0111
666.29
26
B

AUTHOR: Alent'yev, A. A.; Gurovich, Ya. I.; Yemel'yanov, B. M.; Kovalev, P. S.; Manchuk, K. I.

TITLE: Composition of a charge for glazing. Class 48, No. 170815 B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 111

TOPIC TAGS: glass coating, B glazing, silicon

ABSTRACT: This Author's Certificate introduces: 1. A glazing compound based on silicon oxide. The physical and mechanical properties of the glazing are improved by using the following components (in percent): silicon oxide--61.0-64.0; titanium dioxide--5.0-10.0; potassium oxide--4.7; sodium oxide--9.3; lithium oxide--8.0; boron oxide--4.0; fluorine above 100%--10.0. 2. A modification of this glazing compound which contains 3% iron sulfide. 3. A modification of this glazing compound which contains 5% aluminum oxide.

ASSOCIATION: none

SUBMITTED: 18May63 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

Card 1/1 mB

PROCESSES AND PROPERTIES INDEX

Ca

7

**Kinetics of the formation of corrosion centers on metals** R. I. Gurovich. *Bull. acad. sci. U. R. S. S., Classe sci. mat. nat., Sér. chim.* 1937, 1453-81 (in French 1484-6); cf. *C. A.* 31, $8483^9$.—The formation of corrosion centers (I) on the metal surface when Fe, Al and Be are exposed to moist $I_2$ vapors (II) proceeds in the liquid phase and is partly a photochem. reaction. The size of I and their no. vary inversely and depend both on the amt. of moisture and the rate of passage of II over the metal surface. The lower the moisture content (temp. and concn. of II const.) and the more rapid the passage of II the greater the no. of I and the smaller their size. The no. of I also increases with temp. elevation (concn. of $I_2$ and $H_2O$ vapors const.) and with concn. increase of II (temp. and moisture const.). A thick oxide film on Fe or Al protects the metal from II and retards the formation of I. Of the stainless steels studied only Ti steel proved resistant to II. The metals Ag, Cu, Pb and Cd do not form well-defined I. The mechanism of the formation of I is discussed.

John Livak

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

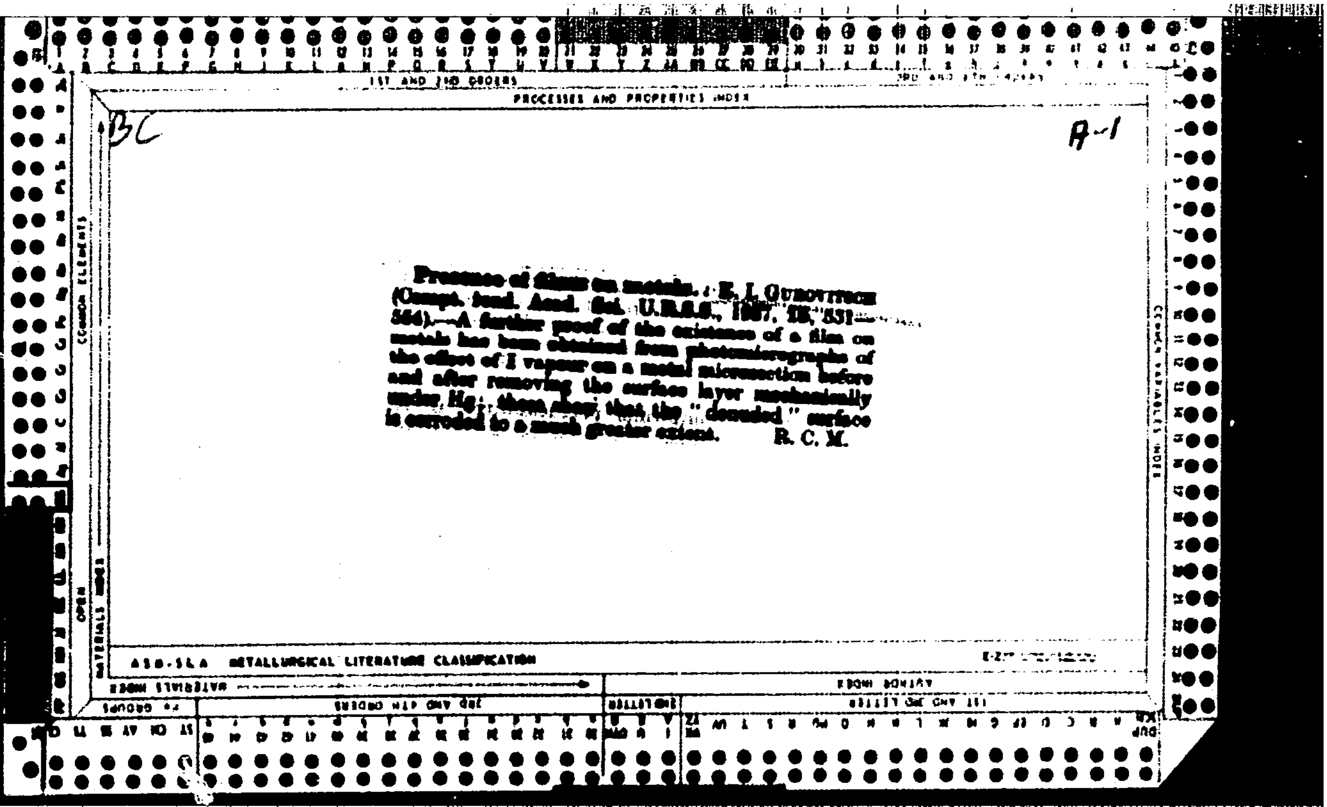
BC

B-I-5

**Accelerated method of determining corrosivity of iron and steel.** E. I. Gurovitsch (Zavod. Lab., 1937, 6, [illegible]).—The no. of centres of corrosion forming on a polished Fe surface exposed to damp I vapour varies parallel with temp. and [I] and inversely with pressure and [$H_2O$], and is characteristic, under const. conditions, of a given steel. A method of determining corrosivity is derived therefrom.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

A-1

PROCESSES AND PROPERTIES INDEX

**Presence of films on metals.** E. I. GUROVITCH (Compt. rend. Acad. Sci. U.R.S.S., 1937, 15, 531—534).—A further proof of the existence of a film on metals has been obtained from photomicrographs of the effect of I vapour on a metal microsection before and after removing the surface layer mechanically under Hg; these show that the "denuded" surface is corroded to a much greater extent. R. C. M.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

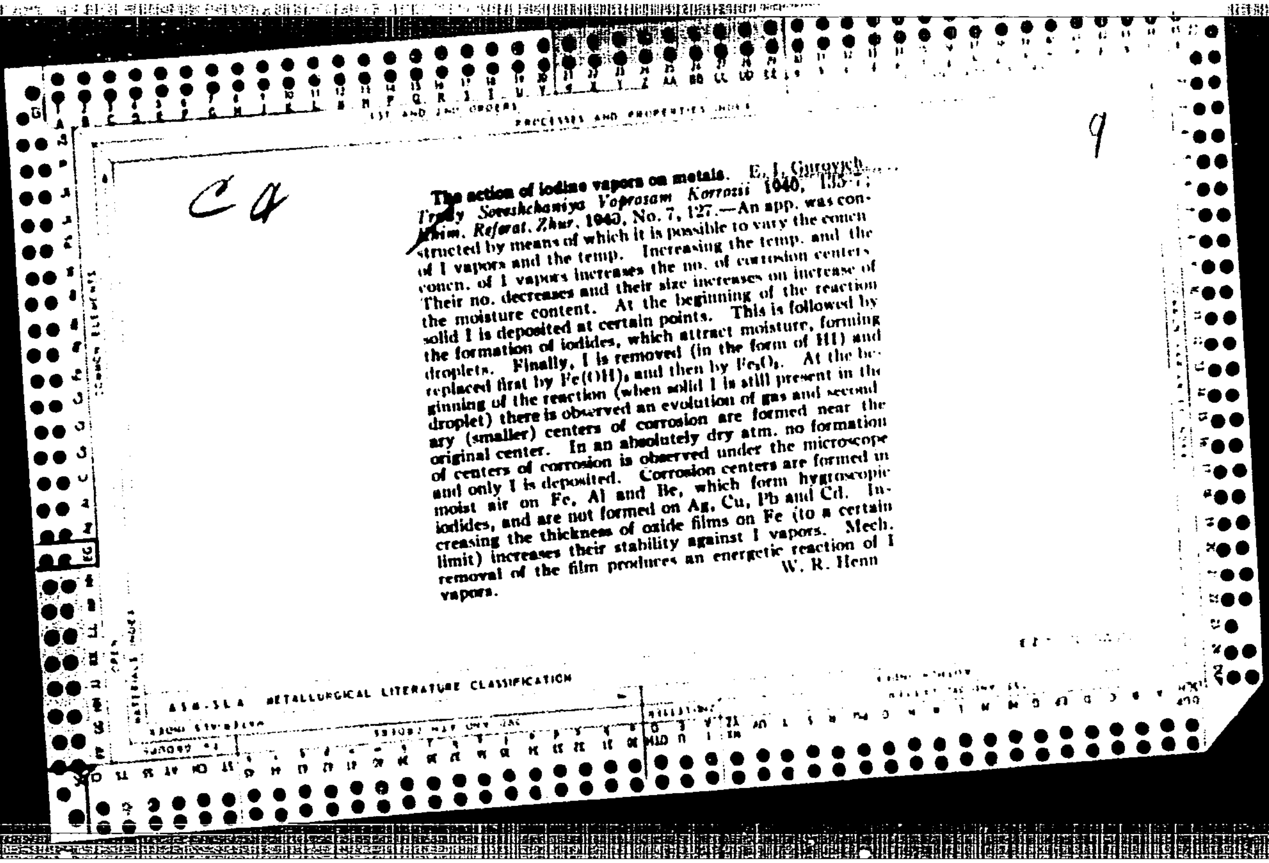
PROCESSES AND PROPERTIES INDEX

M

7

APPARATUS FOR THE CORROSION TESTING OF METALS BY ALTERNATE IMMERSION IN ELECTROLYTES. E. I. GUROVICH (ZAVOD. LAB., 1939, 8, 335-336; Chem. zentr., 1941, 112, (1), 1088).--(In Russian.) The apparatus consists of a slowly rotation (3-4 rotations/minute)brass spindle, to which small square sheet-metal specinens under investigation are attached by means of brass or ebonite clamps in such a manner that they are completely imersed in the liquid with every rotation of the spindle.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



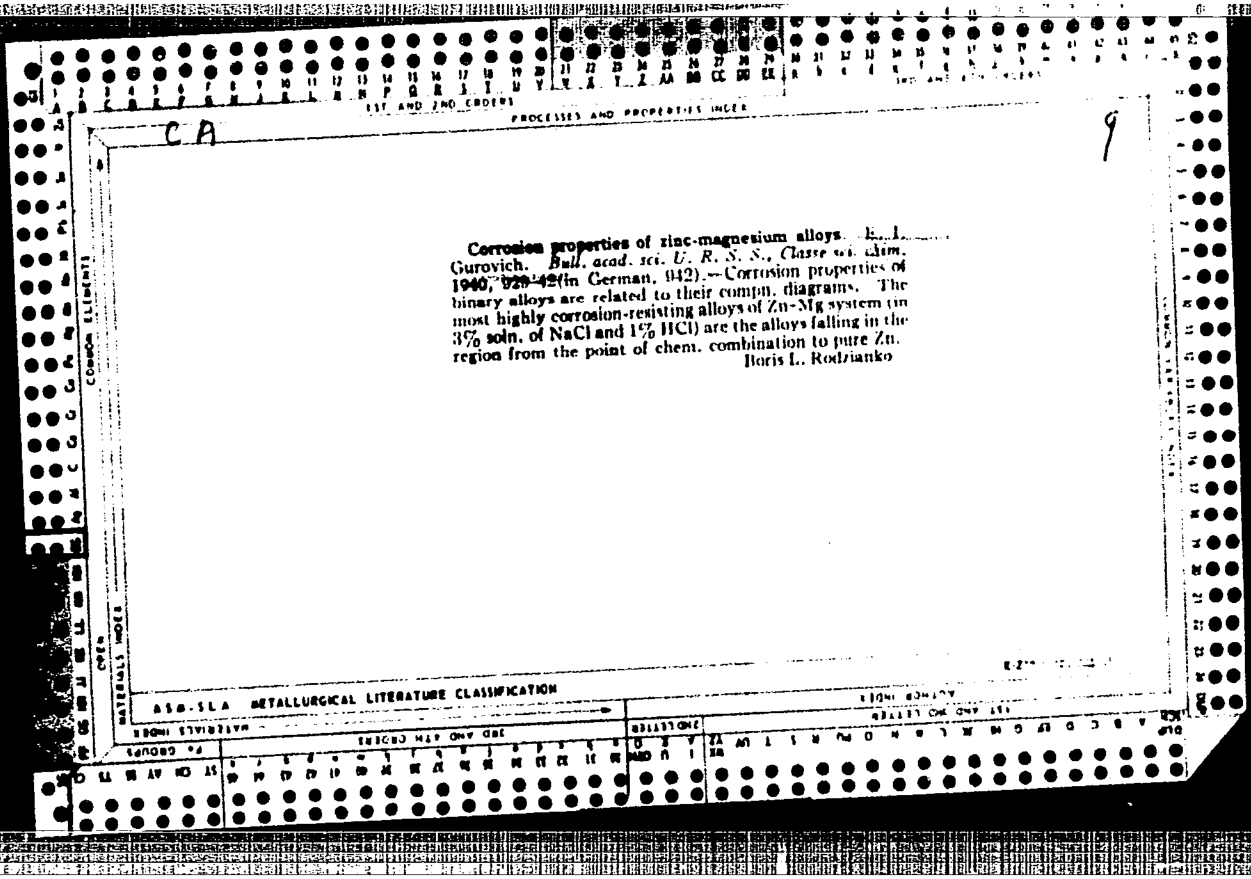
1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX

Ca

9

**The action of iodine vapors on metals.** E. I. Gurovich. *Trudy Soveshchaniya Voprosam Korrozii* 1940, 135-7; *Khim. Referat. Zhur.* 1940, No. 7, 127.—An app. was constructed by means of which it is possible to vary the concn. of I vapors and the temp. Increasing the temp. and the concn. of I vapors increases the no. of corrosion centers. Their no. decreases and their size increases on increase of the moisture content. At the beginning of the reaction solid I is deposited at certain points. This is followed by the formation of iodides, which attract moisture, forming droplets. Finally, I is removed (in the form of HI) and replaced first by $Fe(OH)_3$ and then by $Fe_2O_3$. At the beginning of the reaction (when solid I is still present in the droplet) there is observed an evolution of gas and secondary (smaller) centers of corrosion are formed near the original center. In an absolutely dry atm. no formation of centers of corrosion is observed under the microscope and only I is deposited. Corrosion centers are formed in moist air on Fe, Al and Be, which form hygroscopic iodides, and are not formed on Ag, Cu, Pb and Cd. Increasing the thickness of oxide films on Fe (to a certain limit) increases their stability against I vapors. Mech. removal of the film produces an energetic reaction of I vapors.

W. R. Henn



CA

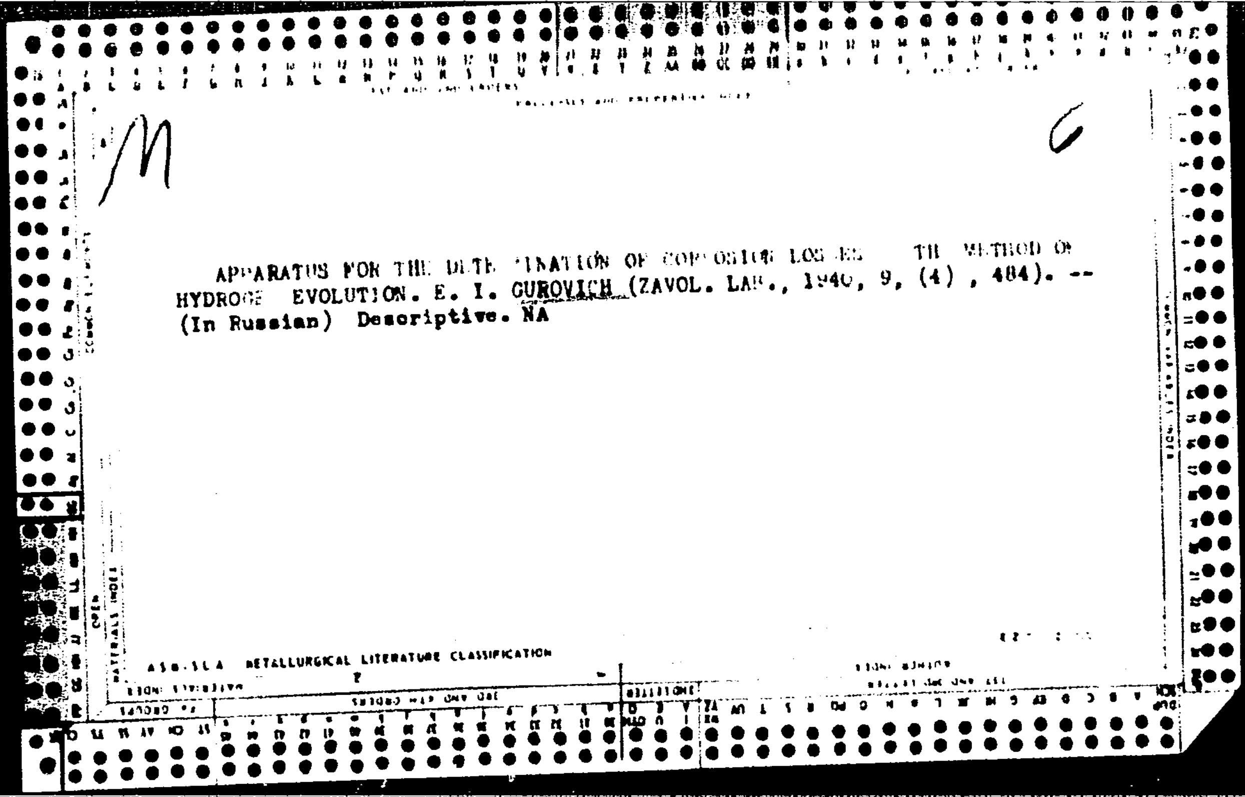
9

PROCESSES AND PROPERTIES INDEX

**Corrosion properties of zinc-magnesium alloys.** E. I. Gurovich. *Bull. acad. sci. U. R. S. S., Classe sci. chim.* **1940**, 920-42 (in German, 942).—Corrosion properties of binary alloys are related to their compn. diagrams. The most highly corrosion-resisting alloys of Zn-Mg system (in 3% soln. of NaCl and 1% HCl) are the alloys falling in the region from the point of chem. combination to pure Zn.

Boris L. Rodzianko

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



M

6

APPARATUS FOR THE DETERMINATION OF CORROSION LOSSES BY THE METHOD OF HYDROGEN EVOLUTION. E. I. GUROVICH (ZAVOL. LAB., 1940, 9, (4), 484). -- (In Russian) Descriptive. NA

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

m

2 f

*Academy of Sciences, U.S.S.R. *Transactions of the Second Conference on the Corrosion of Metals.* [Held January 15-19, 1941.] Volume II. [In Russian.] Edited by **A. N. Frumkin, E. I. Gurovich,** and **B. N. Kabanov.** 25 × 17 cm. Pp. 208, illustrated. 1943. Leningrad and Moscow: Izdatel'stvo Akademii Nauk S.S.S.R. (18.50 Rbls.)

[Among papers of non-ferrous interest are: "On the Solution of Aluminium in Acids and Alkalies" (M. Straumanis); "The Mechanism of Depolarization of Local Cathodes in Corrosion with Oxygen Depolarization" (N. D. Tomashov); "Irreversible Electrode Potentials of Metals" (G. B. Clark and G. V. Akimov); "On the Passivity of Platinum" (B. V. Ershler); "The Anodic Passivation of Lead in Sulphuric Acid" (B. N. Kabanov); "The Structure and Mechanism of Formation of Surface Films on Metals" (P. D. Dankov); "The Laws of Formation and Growth of Crystals in Electrolysis" (K. M. Gorbunova); "The Effect of Some Metallic Salts (Mercury, Tin, Lead) on Cathodic Processes in Zinc Electrolytes" (N. T. Kudryavtsev); "Quality Control of Electrodeposits" (D. S. Abramson); "Electrodeposition at the Stalin Automobile Works" (A. I. Levin); "On the Work of the State Institute of Applied Chemistry on Corrosion" (I. A. Aldzhemyan); "On the Question of the Effect of Mineral Acids on Metals and Alloys" (I. Ya. Klinov); "Electrodeposits of Manganese from Aqueous Sulphate Solutions" (P. I. Tertikov, A. K. Reikhshtadt, and A. N. Ivanova).]

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CA

9

**Extract of linseed filter cake as corrosion inhibitor for iron and steel.** B. I. Gurovich. *Khimicheskaya Prom.* 1945, No. 12, 10.—Salt and acid exts. of linseed filter cake are very effective inhibitors in pickling iron and steel. The salt ext. is obtained with a soln. of NaCl. This inhibitor should be used when the pickling soln. is a $H_2SO_4$ soln. The acid ext. is obtained with $H_2SO_4$ and is preferably used when the pickle is a HCl soln. M. Hosch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

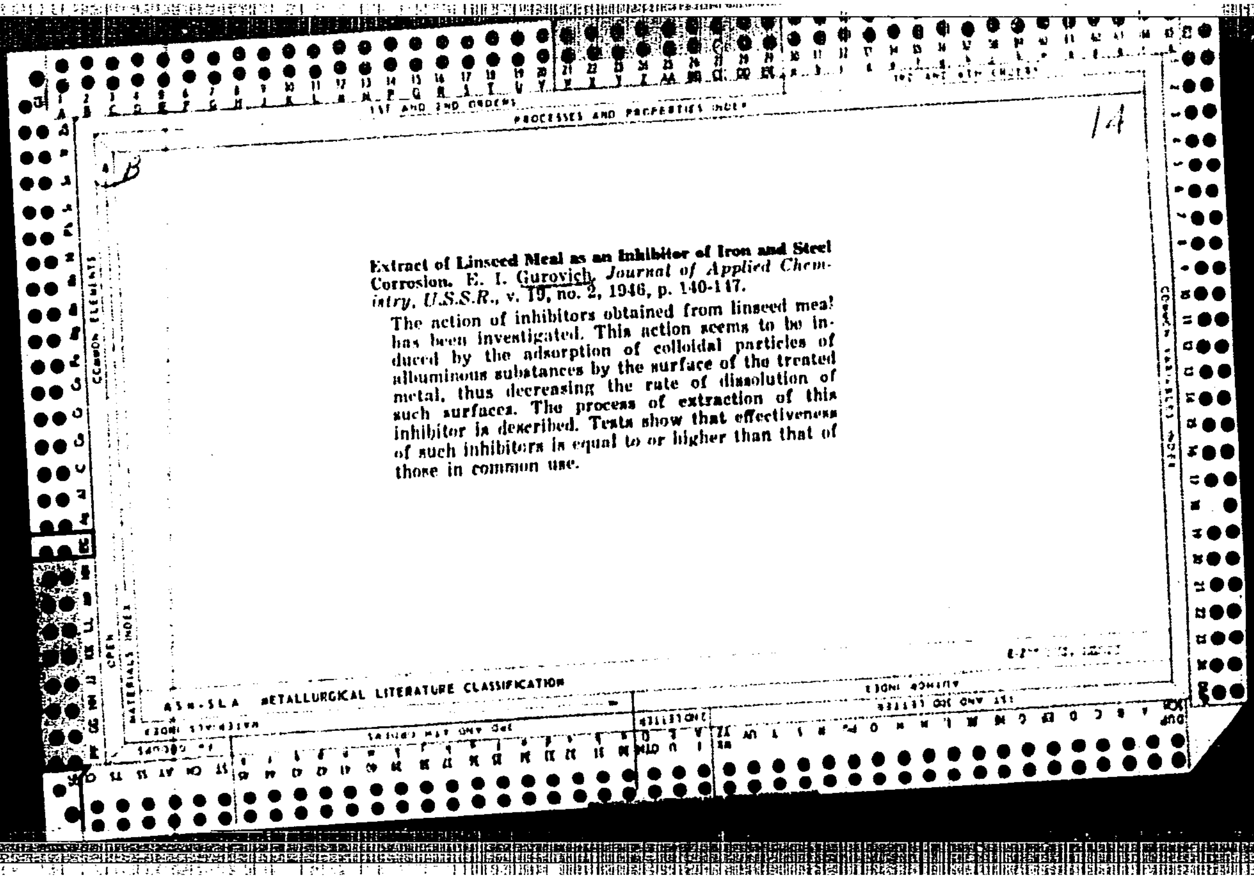
CA

9

**Sodium hexametaphosphate as inhibitor of corrosion of iron in salt solutions.** E. I. Gurovich and I. V. Krotov. *J. Gen. Chem. (U.S.S.R.)* 16, 1951-60(1946)(in Russian). Addn. of $(NaPO_3)_6$ (prepd. by heating $NaH_2PO_4$ or $NaH_2PO_4$ to 700-50° and rapidly cooling) to $CaCl_2$ soln. (28°Bé.) inhibited corrosion of Fe, with 16 γ/ml., the loss of wt. after 3 months was 0.2 g./sq. dm. as against 3.75 without the inhibitor. This concn. is optimum and corresponds to longest persistence of the inhibiting effect; curves of loss of wt. *w* against concn. of $(NaPO_3)_6$, drawn for exposures from 15 to 105 days, all show a min. and crowd together at 16 γ/ml. In NaCl (25°Bé.), the inhibiting effect of 16 γ/ml. $(NaPO_3)_6$ is somewhat greater than in $CaCl_2$; after 3 months, *w* was reduced 19.5 times as against 18.5 times); in 3 months, *w* rose uniformly from 0.01 to 0.36 g./sq. dm.; the min. of *w* as a function of concn. is somewhat flatter, lying between 8 and 16 γ/ml. $(NaPO_3)_6$. In a 50:50 mixt. of the $CaCl_2$ and NaCl solns., 16 γ/ml. is still optimum; the corresponding inhibition of *w* is 13:1 after 3 months. In half-immersion, the inhibiting effect is still 4-5 times; it falls to nearly zero in intense circulation of the soln. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
COMMON ELEMENTS
MATERIALS INDEX
OPEN
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

14

B

**Extract of Linseed Meal as an Inhibitor of Iron and Steel Corrosion.** E. I. Gurovich. *Journal of Applied Chemistry, U.S.S.R.*, v. 19, no. 2, 1946, p. 140-147.

The action of inhibitors obtained from linseed meal has been investigated. This action seems to be induced by the adsorption of colloidal particles of albuminous substances by the surface of the treated metal, thus decreasing the rate of dissolution of such surfaces. The process of extraction of this inhibitor is described. Tests show that effectiveness of such inhibitors is equal to or higher than that of those in common use.

GUROVICH, Ye. I.

AID - P-95

Subject : USSR/Chemistry

Card : 1/1

Author : Gurovich, Ye. I.

Title : Action of fused chlorides of lithium, sodium, and potassium on nickel and copper, and on some steels

Periodical : Zhur. Prikl. Khim. 27, no. 4, 425-432, 1954

Abstract : This is the first of a series of investigations on the action of salts on metals. Isotherms of corrosion of nickel, copper and of steels (steel EYa-1, heat-resistant steel, and carbon steel) in fused chlorides are shown on diagrams. Eight references (one U.S.S.R.): 1889-1940. One graph; 3 tables; 6 diagrams.

Institution : None

Submitted : March 14, 1953

GUROVICH, Ye.I.

"Rare earth metal alloys" by E.M.Savitskii and others. Reviewed by E.I.Gurovich. Zhur.neorg.khim. 8 no.9:2214 S '63.

(MIRA 16:10)

GUROVICH, Ye.I.

Proceedings of the conference on boron. Boron; synthesis, structure and properties. Zhur. neorg. khim. 9 no.2:506-507 '64.

Proceeding of two symposiums. From borax to boranes. Ibid.:508-510 (MIRA 17:2)

GUROVICH, Ye.I.

"Rare metals." C.A.Hampel. Reviewed by E.I.Gurovich. Zhur.neorg.khim. 1 no.1:188-190 '56. (MLRA 9:10)

(Metals, Rare and minor) (Hampel, C.A.)

GUROVICH, Ye.I.

"Production of heavy water" by J.O. Maloney and others. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 1 no.11: 2646-2647 N '56. (MLRA 10:5)
(Deuterium oxide) (Maloney, J.O.)

GUROVICH, Ye.I.

"The Metallurgy of Zirconium" edited by B. Lustman and F. Kerze. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 1 no.12:2831-2832 D '56. (MLRA 10:6)

(Zirconium--Metallurgy)

Gurovich E. I.

[illegible] in molten mixtures of lithium, sodium [illegible] on nickel, copper, duralumin, and [illegible] Gurovich. *Zhur. Priklad. Khim.* 29, [illegible] rosion of metals in molten nitrates of Li, Na, and K [illegible] a loss (soln.) and a gain (scaling) in wt. Polytherms [illegible] in wt. vs. temp. between 400 and 600°, and [illegible] in wt. vs. time at 400° were plotted. [illegible] evaluated visually by the coloring of the surface film [illegible] the scale on Ni formed by NaNO$_3$ and KNO$_3$ [illegible] with the temp. [illegible] in wt. decreased and the [illegible] of the [illegible]

[illegible] KNO$_3$ for Ni, duralumin, and stainless steel; [illegible] and a black film [illegible]

GUROVICH, Ye.I.

"Thermoelectric properties of precious metals and their alloys" by A.A. Rudnitskii. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 2 no.3:709 Mr '57. (MLRA 10:5)

(Precious metals--Electric properties)

(Rudnitskii, A.A.)

GUROVICH, Ye.I.

"Sodium, its manufacture, properties, and uses" by M. Sittig [in English]. Reviewed by E. I. Gurovich. Zhur. neorg. khim. 2 no.11:2686-2687 N '57. (MIRA 11:3)
(Sodium) (Sittig, M.)

AUTHORS: Gurovich, Ye. and Sosnina, A. S. (Moscow). 24-4-32/34

TITLE: Corrosion in sea water of steel coated with petroleum bitumen films. (Korroziya stali, pokrytoy plenkami iz neftyanykh bitumov v morskoy bode).

PERIODICAL: "Izv. Ak. Nauk, Otd. Tekh. Nauk" (Bulletin of the Ac. Sc., Technical Sciences Section), 1957, No.4, pp.172-173 (USSR).

ABSTRACT: Certain results are described of tests of bitumen coatings obtained during de-asphalting of petroleum residues. These bitumens are obtained at relatively low temperatures, they are not subject to oxidation and contain asphatenes and tar which change less than bitumens obtained by oxidation. The tests were carried out for specimens which were fully submerged or partly submerged in the electrolyte (water of the Caspian Sea) and for specimens suspended in the air above the surface of the solution. The characteristics of the used bitumens are detailed in Table 1, p.172. The results, which are enumerated in Table 2, show that the maximum loss of weight of the specimens occurred in the case of half-submersion - at the boundary of the two phases, air-liquid; the losses were smallest for the specimens which were entirely inside the gaseous phase. In the case of full submersion the best protection was obtained by films of cracking residue bitumen dissolved

Card 1/2

Corrosion in sea water of steel coated with petroleum bitumen films. (Cont.) 24-4-32/34

in toluol; for protecting steel against corrosion above the electrolyte and along the water line the best results were obtained by films of the tar bitumen of Romashkin petroleum.

There are 2 Tables, 7 references, all of which are Russian.

SUBMITTED: August 26, 1956.

AVAILABLE:

Card 2/2

Gurovich, E. I.

Distr 4E2j

Corrosive activity of nitrate-nitrite melts. E. I. Gurovich and G. P. Shtokman. *Zhur. Priklad. Khim.* 30, [illegible] 31, 1956c.—The corrosive activity of a [illegible] melt (I) contg. KNO$_3$ [illegible], NaNO$_2$ 7, and [illegible] was studied. [illegible] steel [illegible] and Armco steel was studied. [illegible] failed at 500°, [illegible] 5 [illegible] corroded very little, [illegible] at 500-600°. The latter 2 failed at 600° and [illegible] contained 0.32% Cr. Alloys OCrNiM contg. [illegible] and Cr 1.04% and some Mo, and Cr18Ni9T contg. [illegible] Ni 9 and Ti 0.5% were stable at 600° and the melt [illegible] 0.013% CrO$_3$ and no Fe or Ni. Armco steel [illegible] The addn. of 2% K$_2$Cr$_2$O$_7$ to I increased the [illegible] of the melt toward alloys OCrNiM and [illegible] 12CrMF [illegible] and M [illegible] 0.38%. I. Bencowitz

Gurovich, Ye I

78-2-28/43

**AUTHOR:** Curovich, Ye. I.

**TITLE:** The Decomposition Potentials of Some Niobium Compounds and the Separation of Niobium by the Electrolysis of Melts
(Potentsialy razlozheniya nekotorykh soyedineniy niobiya i vydeleniye niobiya elektrolizom iz rasplavov)

**PERIODICAL:** Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 2, pp.450-455 (USSR)

**ABSTRACT:** The decomposition potentials in the mixtures KF, KCl and $K_2NbF_7$ as well as the above-mentioned salts with $Nb_2O_5$ were determined. The investigations were performed in an electrolytic cell which is represented by a conic container of dense aluminum silicate. The cell is divided into an anode- and a cathode-space by a porous aluminum-silicate-diaphragm. Graphite bars were used as anodes and cathodes. The temperature of the reaction melt amounts to 850 ± 20°C. The decomposition potential for $K_2NbF_7$ from a melt mixture of KF and KCl is 1,65 V. On addition of $Nb_2O_5$ the decomposition potential rises

Card 1/3

78-2-28/43

The Decomposition Potential of Some Niobium Compounds and the Separation of Niobium by the Electrolysis of Melts

to 2,56 V. The decomposition curve of the mixture $Nb_2O_5$ and $K_2NbF_7$ indicates that a complex compound develops in the melt between $Nb_2O_5$ and $K_2NbF_7$ and that the decomposition curve has only one break. A method for the production of metallic, powdery niobium by electrolysis of molten salts was worked out. The electrolytic container consists of carbon which also operates as anode. The cathode material consists of molybdenum, the electrolytic substance of differently composed melts of KF, KCl and $K_2NbF_7$ and freshly precipitated $Nb_2O_5$. The electrolysis proceeds completely smoothly as a current density of 0,2 - 1,0 A/cm$^2$ and a temperature of 850°C. The anodic effect during the electrolysis was not determined. The cathode replacement is carried out under current and the storing and treatment of the metallic niobium powder precipitated on the cathodes is performed in an argon atmosphere. The entire process of electrolysis can be carried out continuously. The produced metallic niobium possesses high purity and at most 0,01 % $Nb_2O_5$. There are 5 figures, and 23 references, 3 of which are Slavic.

Card 2/3

The Decomposition Potential of Some Niobium Compounds and the Separation of Niobium by the Electrolysis of Melts 78-2-28/43

**ASSOCIATION:** Institute for General and Anorganic Chemistry imeni N. S. Kurnakov AS USSR
(Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR)

**SUBMITTED:** January 3, 1957

**AVAILABLE:** Library of Congress

Card 3/3

GUROVICH, Ye.I.

"Inert gased, hydrogen and halogens" [in French] by P. Laffitte, H. Brusset. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 3 no.2: 547-548 F '58. (MIRA 11:4)

(Halogens) (Hydrogen)
(Laffitte, P.) (Brusset, H.)

GUROVICH, Ye.I.

"Manganese" [in English] by A.H. Sully. Reviewed by E.I. Gurovich.
Zhur. neorg. khim. 3 no.2:548 F '58. (MIRA 11:4)
(Manganese) (Sully, A.H.)

[illegible]

AUTHORS: Gurovich, Ye. I., Belova, V.I. 78-3-5-38/39

TITLE: **Criticisms** and Bibliography (Kritika i bibliografiya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1268 - 1270 (USSR)

ABSTRACT: Two new non-Soviet books are listed with detailed descriptions **and favorable reviews.**

**1. Bibliography--Chemistry (?) - USSR**

Card 1/1

5(2)

SOV/80-32-4-19/47

AUTHOR: Gurovich, Ye.I.

TITLE: The Action of Molten Caustic Alkalis of Lithium, Sodium and Potassium, on Nickel, Copper, Iron and Stainless Steel (Deystviye rasplavlennykh shchelochey litiya, natriya i kaliya na nikel', med', zhelezo i nerzhaveyushchuyu stal')

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 817-822 (USSR)

ABSTRACT: The study of corrosion activity of molten caustic alkalis is of great theoretical and practical interest. There are many investigations dealing with this problem, such as those by Pershke and Popova /Ref. 1/ and others. However, the problem has not been studied kinetically and at temperatures mostly not exceeding 350 to 400°C. The present investigation fills up these gaps. The action of molten NaOH, KOH and LiOH was tested on nickel, copper, Armco-iron and steel of the Kh18N9T-grade. Temperatures of tests were 350, 400 and 450°C for NaOH; 400; 450 and 500°C for KOH, and 500; 550 and 600°C for LiOH. The results of the tests are presented in graphical form: isotherms and polytherms of corrosion of the above

Card 1/2

SOV/80-32-4-19/47

The Action of Molten Caustic Alkalis of Lithium, Sodium and Potassium, on Nickel, Copper, Iron and Stainless Steel

metals in molten NaOH are shown in Figures 1, 2 and 5; in molten KOH are shown in Figures 3, 4, and 5, and in molten LiOH are shown in Figures 6 and 7. An examination of the results makes it obvious that the corrosion activity of caustic alkalis increases from LiOH to KOH, while NaOH stands between them, it means that corrosion activity depends on the position of a cation in Mendeleyev's periodic table. There are 7 graphs and 25 references, 5 of which are Soviet, 7 English, 9 German, 1 American, 1 French, 1 Italian and 1 Polish.

SUBMITTED: January 28, 1958

Card 2/2

GUROVICH, Ye.I.

"Tantalum and niobium" by G.V.Samsonov, V.I.Konstantinov. Reviewed by E.I.Gurovich. Zhur.neorg.khim. 5 no.7: 1639 Jl '60. (MIRA 13:7)
(Tantalum) (Niobium)
(Samsonov, G.V., (Konstantinov, V.I.)

GUROVICH, Ye.I.

"Art of experimentation in inorganic chemistry" by H. Lux [in German]. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 5 no.8:1918-1919 Ag '60. (MIRA 13:9)
(Chemistry, Inorganic) (Lux, H.)

GUROVICH, Ye.I.

"Inorganic chemistry" by István Naráy-Szabo. Reviewed by E.I. Gurovich. Zhur. neorg. khim. 5 no. 12:2856-2857 D '60. (MIRA 13:12)

(Chemistry, Inorganic)
(Naráy-Szabo, István)

S/080/60/033/009/010/021
A003/A001

AUTHOR: Gurovich, Ye.I.

TITLE: The Effect of Molten Halides on Nickel, Copper, Iron and Some Steels

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 9, pp. 2096-2101

TEXT: The effect of chlorides, fluorides (in the form of a eutectic mixture $AlF_3$-NaF, because of the high melting point of pure fluorides), potassium bromide and potassium iodide on metals was investigated at 800, 850 and 900°C and a holding time of 1, 2, 3 and 4 hours. The eutectic mixture of 30.4 weight % sodium fluoride and 69.6 weight % aluminum fluoride with a melting point of 685°C affected Armco iron most. Nickel, copper and Х18Н9Т (Kh18N9T) 18 stainless steel were more stable. On the surface of nickel and copper more or less stable fluoride or oxyfluoride films are formed. Molten potassium bromide had the highest effect on copper, less on Armco iron, the least effect on nickel and Kh18N9T stainless steel. The highest resistance to potassium iodide was observed in Kh18N9T stainless steel, followed by nickel, Armco iron and copper. The minimum effect in all cases investigated was observed in the action of

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S/080/60/033/009/010/021
A003/A001

The Effect of Molten Halides on Nickel, Copper, Iron and Some Steels

chlorides. The fluorine ion showed the maximum effect except in the case of copper, for which the bromine ion was most effective. There are 12 figures, 2 tables and 1 Soviet reference.

SUBMITTED: February 15, 1960

Card 2/2

ACCESSION NR: AT4014066 S/3072/63/000/000/0115/0120

AUTHOR: Gurovich, Ye. I.; Veyler, S. Ya.; Likhtman, V. I.; Voskresenskaya, N. K.

TITLE: Investigation of the lubricating properties of salt mixtures during the pressure heat treatment of metals

SOURCE: Fiz.-khim. zakonomernosti deystviya smazok pri obrabotke metallov davleniyem. Moscow, Izd-vo AN SSSR, 1963, 115-120

TOPIC TAGS: salt mixture, lubricant, lubricating property, heat treatment, metal, metal alloy, salt eutectic, corrosion, wire drawing

ABSTRACT: Since the usual lubricants such as graphite, liquid glass, or mineral oils prove unsatisfactory during hot pressure working of stainless steels, some new lubricants such as salt mixtures have been investigated. The following salt mixtures have been tested: (1) Nitrate-nitrite salts, applied during punching of aluminum alloys. These have proved dangerous because of their explosive properties; (2) Salts such as $MgCl_2$, KCl, NaCl, $ZnCl_2$ and $K_2SO_4$; (3) Melts containing $ZnCl_2$ and ZnS; (4) Melts such as $PbCl_2$; (5) Mixtures containing salts of Sn; (6) Melts such as Cd-salts, Li-salts, and salt mixtures such as phosphates. Two groups of eutectic mixtures may be distinguished: (a) Salt mixtures forming

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ACCESSION NR: AT4014066

high viscosity liquids at high temperatures that shield the surface from friction and (b) Salt eutectics that, in contact with the hot metal, decompose and form an easily melted metal. The lubrication properties of all mixtures tested were evaluated on the basis of their corrosive action when applied as lubricants for pressure punching of Al, Fe, and Mg alloys. The corrosion tests were carried out by full immersion of the tested metal and by the drop method. It was proven that the corrosive activity of the tested lubricants increased proportionally to their hygroscopic properties. In some special mixtures of salts, their corrosive action decreased; for example, NaCl and KCl or Li-salts, which appear highly corrosive by themselves, are much less corrosive or even not corrosive when applied as a mixture. The lubrication properties of the fused salts were evaluated by various methods under semitechnological and laboratory conditions. The salt eutectics reduced the pressure necessary for extrusion or punching of low C-steel and Al by 50% as compared with no lubrication. Compared with graphite lubrication, the pressure was the same. The authors also studied the effect of salt lubrication during the process of wire drawing hot aluminum D-16 and steel. It was found that salt mixtures had the best lubrication properties in narrow temperature intervals close to their softening temperature. A plot of wire drawing pressure

ACCESSION NR: AT4014066

versus temperature with eutectic $ZnCl_2$-KCl applied as a lubricant showed a minimum close to 200C whereas the eutectic temperature appeared lowest near 230C. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: None

| | | |
|---|---|---|
| SUBMITTED: 00 | DATE ACQ: 19Dec63 | ENCL: 00 |
| SUB CODE: MM | NO REF SOV: 006 | OTHER: 006 |

Card 3/3

ACCESSION NR: AT4014067 S/3072/63/000/000/0124/0135

AUTHOR: Rodionova, G. A.; Finkel'shteyn, Ya. S.; Veyler, S. Ya.; Gurovich, Ye. I.; Novikov, V. T.; Rozenfel'd, N. B.; El'bert, S. M.; Brazilovskiy, V. I.

TITLE: Investigation of technological lubricants based on salt mixtures for hot rolling of pipe

SOURCE: Fiz.-khim. zakonomernosti deystviya smazok pri obrabotke metallov davleniyem. Moscow, Izd-vo AN SSSR, 1963, 124-135

TOPIC TAGS: lubricant, salt mixture, hot rolling, steel pipe, pipe rolling

ABSTRACT: In the hot rolling of pipe on continuous rolling mills with long frames, the lubrication conditions are unusually difficult. Special lubrication is required to provide for the proper processing conditions, especially temperatures, to obtain rolled products and pipe of satisfactory quality. Of the six tested salt-lubricants containing various amounts of K, Li, Mg or Na oxides or chlorides, the best for the hot rolling of pipe in continuous

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ACCESSION NR: AT4014067

rolling mills proved to be a lubricant containing 40% $ZnCl_2$, 30% KCl, 30% NaCl, and 10% MgO, plus 45% water (compared to the weight of salts and oxides). The pipe rolling process using 1Kh18N9T steel and high-carbon steel proved satisfactory with this lubricant. The top loadings in the continuous rolling mills were increased by 4.5% as compared with the graphite-mazut lubricant. Pipe rolled with the above-mentioned lubricant showed no intercrystalline corrosion. The etching time of pipe obtained by this process was half that of pipe rolled with the use of graphite-mazut lubricant. The effect of the concentration of MgO, used as a filling component in the lubricant, on its melting point and crystallization was also determined, as well as the effect of the amount of solvent on the consistency of the lubricant and its ability to protect the metal surface. Orig. art. has: 6 figures and 3 tables.

ASSOCIATION: none

SUMITTED: 00 DATE ACQ: 19Dec63 ENCL: 00

SUB CODE: MM, IE NO REF SOV: 003 OTHER: 000

Card 2/2

GUROVICH, Ye.I.

"Cobalt, its chemistry, metallurgy and uses". Zhur. neorg. khim. 9 no.6:1521-1522 Je'63 (MIRA 17:8)

GUROVICH, Ye.I.

"Rare-earth alloys" by K.A.Gshneidner. Reviewed by E.I.Gurovich. Zhur.neorg.khim. 9 no.1:238 Ja '64. (MIRA 17:2)

[redacted]

SHAKH, A.D., GUROVICH, Ye.S.

Economic aspects of the rubber industry of the German Federal Republic. Kauch.i rez. 19 no.7:34-39 Jl '60. (MIRA 13:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

(Germany, West--Rubber industry)

KHABAROV, V.P.; GUROVICH, Ye.S.

Increasing the productive capacity of existing enterprises of the rubber industry. Kauch. i rez. 20 no.10:36-38 O '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber industry)

GUROVICH, Ye.S.

Changes in the raw material balance of the rubber industry of capitalist countries. Kauch. i rez. 24 no.12:39-42 '65. (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GUROVITS, I.M.; KANZBERG, M.S., starshiy inzhener

[redacted]

Better utilization of knitted fabrics. Leg.prom.15 no.8:48-50 Ag '55. (MIRA 8:10)

1. Nachal'nik planovogo otdela fabriki "Krasnaya zafya." (for Gurovits)

(Knit goods)

ACC NR: AP6033473 SOURCE CODE: UR/0413/66/000/018/0059/0060

INVENTOR: Gurovits, L. S.; Khayutin, S. G.; Shakhbazyan, N. O.; Shpicninetskiy, Ye. S.

ORG: None

TITLE: Method for connecting a piezoelectric transducer to the acoustic conductor of an ultrasonic delay line. Class 21, No. 185984 [announced by the State Scientific Research and Design Institute of Alloys and Nonferrous Metal Processing (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov)]

SOURCE: Izobret prom obraz tov zn, no. 18, 1966, 59-60

TOPIC TAGS: piezoelectric transducer, ultrasonic wave, circuit delay line

ABSTRACT: This Author's Certificate introduces a method for connecting a piezoelectric transducer to the acoustic conductor of an ultrasonic delay line by using a metallic matching layer. The bandwidth and thermal stability of the delay line are increased, and mechanical and acoustic contact between the piezoelectric transducer and acoustic line is improved by using an indium alloy for the joint containing 0.5-25% thallium under a pressure of 20-25 kg/cm$^2$ at a temperature of 145-150°C and holding under these conditions for 3-6 hours.

SUB CODE: 09/ SUBM DATE: 16Aug65

Card 1/1 UDC: 621.374.5

S/046/60/006/02/03/019
B014/B014

AUTHORS: Aleksandrov, K. S., Gurovits, L. S., Kamenskiy, Ye. I. (Moscow)

TITLE: Effect of an Intermediate Layer on the Frequency Characteristics of Ultrasonic Delay Lines

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 2, pp. 171-179

TEXT: In the present paper, the authors derive general formulas for the coefficients of piezoelectric conversion, taking account of the effect of intermediate layers for the case of unilateral and symmetric loading of the converter. Proceeding from the general form of A. A. Kharkevich's theory of piezoelectric converters (Refs. 1 and 2) the authors derive formulas (3) and (4) for the coefficients of unilateral and symmetric loading, respectively. The equivalent-circuit diagram of a converter shown in Fig. 2 in the form of a four-terminal network is used for this purpose. (4) indicates that the conversion losses at resonance frequency under symmetric loading are four times higher than under unilateral loading. An analysis of the formulas derived and calculations of a large

✓B

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Effect of an Intermediate Layer on the Frequency Characteristics of Ultrasonic Delay Lines

S/046/60/006/02/03/019
B014/B014

number of frequency characteristics were carried out by means of electronic computers for the purpose of deriving a general rule for the frequency characteristic and the bandwidth of transmission. Next, the authors state that all combinations of converters, ultrasonic polygons, and intermediate layers can be reduced to three typical cases. First, the authors study intermediate layers of oil, rubber, plastics, and other materials with low acoustical resistance; secondly, intermediate layers with an acoustical resistance between that of the sound conductor and the converter; and thirdly, metallic intermediate layers with high acoustical resistance. The method of calculation set up here makes it possible to explain the shift of the peaks of the frequency characteristic relative to the resonance frequency of the converter, and to calculate them for the production of converters and for the technical planning of delay lines. The authors thank Yu. B. Kobzarev for his helpful advice and assistance, as well as T. V. Ryaplova, L. V. Suchkova, and S. P. Pavchinskaya for their assistance in experiments. There are 6 figures, 2 tables, and 9 references: 7 Soviet and 2 American.

✓B

SUBMITTED: December 27, 1958

Card 2/2

GURSKAYA, G.V.

Crystalline structure of hydrochloride L-phenylalanine. Clarification and discussion of the structure. Kristallografiia 9 no.6: 839-845 N-D '64. (MIRA 18:2)

1. Institut kristallografii AN SSSR.

GURSKAYA, L. I., Cand Med Sci -- (diss) "Types of gastric secretions and their dependence on the functional condition of higher divisions of the central nervous system in man." Leningrad, 1960. 21 pp; (Academy of Sciences USSR, Inst of Physiology im I. P. Pavlov); 200 copies; price not given; (KL, 51-60, 120)

GUROVSKAYA, T.M.

Pelger's nuclear anomaly in labor. Akush. i gin. no.4:62-65 Jl-Ag '54. (MLRA 7:11)

1. Iz kafedry akusherstva i ginekologii (zav. prof. K.N.Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta.

(ABNORMALITIES,
Pelger's nuclear anomaly in labor)
(LEUCOCYTES, abnormalities,
Pelger's anomaly in labor)
(LABOR, in various diseases,
Pelger's nuclear anomaly)

GUROVSKAYA, T.M.

Some blood factors in pregnancy, labor and puerperium. Akush. i gin. no.4:26-31 Jl-Ag '55. (MLRA 8:11)

1. Iz kafedry akusherstva i ginekologii (zav.prof. K.N.Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta.

(BLOOD, in pregn.
in preg .,labor & puerperium)
(PREGNANCY, blood in)
(LABOR, blood in)
(PUERPERIUM, blood in)

GUROVSKAYA, T.M.

Comparative evaluation of various methods of transabdominal cesarean section. Akush. i gin. 36 no.2:28-37 Mr-Ap '60. (MIRA 13:12)
(CESAREAN SECTION)

GUROVSKAYA, T. M.

Cand Med Sci - (diss) "Comparative evaluation of several methods of abdominal wall caesarean section." Moscow, 1961. 16 pp; (Ministry of Public Health USSR, Central Inst for Advanced Training of Physicians); number of copies not given; price not given; (KL, 7-61 sup, 258)

GUROVSKAYA, T.M.(Moskva)

Late results of cesearean section. Fel'd. i akush. 26 no.10: 28-31 O '61. (MIRA 14:11)

(CESAREAN SECTION)

GUROVSKAYA, T.M., kand. med. nauk

Secondary cesarean section and laparotomy in women with a previous history of cesarean section. Akush. i gin. no.1:85-88 '63. (MIRA 17:6)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. K.N. Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

GUROVSKAYA, T.M.

Course of pregnancy, labor and puerperium in patients with venous diseases. Sov. med. 27 no.6:58-62 Je '64.
(MIRA 18:1)

1. Kafedra akusherstva i ginekologii (zav. - prof. K.N. Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

S/153/60/003/004/009/040/XX
B023/B054

AUTHORS: Nikitin, Ye. K., Gurskaya, T. P.

TITLE: Homogenization of Mixtures Having Passed Full Reaction by Means of Water as a Method of Quantitative Analysis. Determination of Magnesium

PERIODICAL: *Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4,* pp. 591 - 599

TEXT: S. I. Spiridonova has recently proved that physical titration is possible in quantitative analysis in many cases of both nonelectrolytes and ionogenic substances. A concentration determination is technically very simple and fast with the use of standard solutions. To determine electrolytes, the authors used another modification of physical titration, namely titration of the heterogeneous (turbid) mixture until its homogenization. The authors' studies were based on the following principles: a) In the reaction, the ion to be determined and the corresponding organic reagent form a compound which has a high molecular

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Homogenization of Mixtures Having Passed S/153/60/003/004/009/040/XX
Full Reaction by Means of Water as a B023/B054
Method of Quantitative Analysis. Determination of Magnesium

weight and is poorly soluble in the mixture having passed full reaction.
b) The resulting precipitate should be well soluble in water in order that a relatively low dilution of the turbid mixture having passed full reaction with water may lead to full dissolution of the precipitate.
c) The precipitate should be obtained in the form of a fine suspension (turbidity) so that the beginning homogenization will be clearly perceptible. The authors used Urotropin as organic reagent. Many electrolytes form fine-crystalline complex compounds with it. Making use of published data (Refs. 3,4,5), the authors employed magnesium-salt solutions for their studies. A fast quantitative micromethod of homogenization with water proved to be the reaction of magnesium salts with Urotropin under formation of a complex bromide compound which is difficultly soluble in the reaction mixture but well soluble in water. Similar reactions of barium-, strontium-, and calcium cations with a Urotropin - bromide mixture were studied for their sensitivity. The conditions for the elimination of inhibiting factors were determined. The error of magnesium determinations was 0.1 micrograms at most. It was established that the anion of ortho-phosphoric acid does not disturb

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Homogenization of Mixtures Having Passed Full Reaction by Means of Water as a Method of Quantitative Analysis. Determination of Magnesium

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the magnesium determination by the method described. The authors illustrate the course of their studies by 10 tables and 1 figure. Table 1 shows that, if the $MgSO_4$ solution is 0.056 N, the mixture having passed full reaction is transparent with the addition of KCNS-, KCl-, or KJ electrolytes. The Fig. p. 594 shows the homogenization isotherm of mixtures of chloride - magnesium solutions having passed full reaction with the working solution in titration with water. Table 7 shows that no turbidity occurs at a total concentration of $Ba^{2+}$-, $Sr^{2+}$-, and $Ca^{2+}$ cations of 0.020. There are 1 figure, 10 tables, and 9 references: 4 Soviet, 1 German, 2 French, and 2 Italian.

ASSOCIATION: Saratovskiy meditsinskiy institut Kafedra neorganicheskoy i analiticheskoy khimii (Saratov Medical Institute, Department of Inorganic and Analytical Chemistry)

SUBMITTED: July 28, 1958

Card 3/3

GUROVSKIY, N.N.; KOSMOLINSKIY, F.P.

Problem of periodic secretion of the gastrointestinal system in dogs. Fiziol. zh. SSSR 39 no.4:451-455 July-Aug 1953. (CIML 25:1)

1. Central Institute for the Advanced Training of Physicians, Moscow.

GUROVSKIY, N.N., kand.med.nauk, podpolkovnik medintsinskoy sluzhby

Effect of vibration of the Mi-4 helicopter on the latent period of motor response in a flier. Voen.-med.zhur. no.7:79 Jl '57. (MIRA 11:1)
(MOVEMENT, PSYCHYOLOGY OF)
(VIBRATION--PHYSIOLOGICAL EFFECT)

GUROVSKIY, N.N., kand.med.nauk

Hygienic evaluation of the vibration factor in the MI-4 helicopter. Gig. i san. 24 no.3:27-33 Mr '59. (MIRA 12:5)

1. Iz TSentral'nogo instituta usovershenstvovaniya vrachey.
(AIRCRAFT,
vibration in helicopters (Rus))
(VIBRATION,
in helicopters (Rus))

YUGANOV, Ye.M.; KAS'YAN, I.I.; GUROVSKIY, N.N.; KONOVALOV, A.I.;
YAKUBOV, B.A.; YAZDOVSKIY, V.I.

Sensory reactions and voluntary movements in man under conditions of weightlessness. Izv. AN SSSR. Ser.biol. no.6:897-904 N-D '61.
(MIRA 14:11)

1. Institute of Normal and Pathological Physiology, Academy of Medical Sciences of the U.S.S.R., Moscow.
(WEIGHTLESSNESS)

24602

S/004/61/000/009/002/005
D264/D304

27.6340

AUTHOR: Gerd, M., Candidate of Biological Sciences, and Gurovskiy, N., Candidate of Medical Sciences

TITLE: Training of the brave. Harder on earth - easier in space

PERIODICAL: Znaniye - sila, no. 9, 1961, 12-14

TEXT: The authors describe some of the unusual physical and physiological factors that will affect spacemen (the lack of visual, acoustic and some sensory stimuli, weightlessness, etc.) and discuss means of avoiding their injurious effects on the mind. Artificial stimuli could be arranged to operate in the cabin: the contrast between black space and the brilliant stars could be filtered down, an artificial center of gravity created, earth sounds, speech and music reproduced by radio or records and a television hook-up installed. Man's innate powers of adaptability and defense mechanisms would also help him accommodate to the radical change in environment. The training of prospective astronauts is partly accomplished

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Training of the brave... S/004/61/000/009/002/005
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X

in a "mute" chamber, i.e. a chamber completely sealed to external stimuli. The astronaut remains in the chamber several days, feeding, drinking, sleeping and fulfilling routine and test tasks. Instruments record his physiological indices, cerebral biocurrents, vocal reactions during periodic recording sessions, etc. In the chamber, the astronaut carries out various tests such as reading off the number and color of a bank of panel lamps while special interference signals or random numbers are fed to his earphones. His movements and facial expressions are televized and recorded and used to analyze his mental reactions and psychological state. Apart from conditioning the astronaut, the chamber is also useful in weeding out mentally unsuitable trainees. There are 3 figures.

Card 2/2

GUROVSKIY, N., kand.med.nauk

Hypoxia. Nauka i zhizn' 28 no.9:78-79 S '61. (MIRA 14:12)
(Space medicine) (Anoxemia)

17.2550

26900
S/025/61/000/010/001/003
D264/D304

AUTHOR: Gurovskiy, N. N. and Gerd, M. A., Scientific Associates

TITLE: In the laboratory of space flights

PERIODICAL: Nauka i zhizn', no. 10, 1961, 21 - 28

TEXT: The article describes Soviet methods of training dogs for space flight. The dogs are first accustomed to cabins in the training room and become used to continuous lighting from the illuminator of the cyclops camera. As a first stage in training, the dogs are tried out in special "cramped" cabins to test their reaction to restriction of their movements. These reactions are then used to gage the type of the dog's nervous activity and its suitability for space flight. An account of the different sorts of reaction encountered is given. In the second stage the dogs are accustomed to living in their rubber space suits and to eating from a special automatic food

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In the laboratory of space... D264/D304

dispenser. This consists essentially of a periodically moving belt with small trays. With each periodic movement, a tray coincides with a hatch in the floor above, opening in front of the dog's forepaws. Each tray contains one feed. For space conditions a special high-calorie feed mixture containing sausage, meat, fat, groats and a great deal of water was developed in the form of a viscous jellyish mass. Such food was used for Layka in 1957 and for Belka and Strelka in 1960. It was found that dogs frequently refuse their food because they are thirsty; with their thirst even partly slaked, they will begin to eat. Before the dogs are placed in the cabin to accustom them to the food dispenser, they must, therefore, be well watered. After training, the animals are fully prepared and can stay in a cabin without moving, stand great overloads and vibrations, are not scared by noise, and can sit in all the experimental equipment needed to record the biocurrents of the heart, muscles, and brain, respiration, arterial pressure, etc. The dogs are then

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subjected to comprehensive physiological testing, combining the various factors that would act on them during actual space flight. This testing can last for several days. An account of a typical comprehensive physiological test is given. The authors of the article have written a book giving a more detailed account of the training of animals for space flight; the book will shortly be published by the Publishing House of the Akademiya nauk SSSR (Academy of Sciences, USSR). There are 4 figures.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences, USSR)

30888
S/025/61/000/011/002/003
D243/D302

27.2000

AUTHORS: Gurovskiy, N.N. and Gerd, M.A., Scientific Workers

TITLE: Weightlessness

PERIODICAL: Nauka i zhizn', no. 11, 1961, 86-91

TEXT: The authors state that prolonged weightlessness is a major problem of space flight and discuss its effects on the animal organism with particular reference to the orbital flight of Cosmonaut G.S. Titov. They describe the interior of the cabin of Vostok-2, in particular the cosmonaut's couch, and give an account of the apparatus for automatic control of the interior conditions. Having referred to Titov's psychological state after blast-off, they describe his food and its consumption. Work capacity and efficiency while in the weightless state were judged by the ability to perform simple and complex tasks, all of which were carried out satisfactorily. The disturbance of vestibular

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Weightlessness S/025/61/000/011/002/003
D243/D302

function caused certain unpleasant symptoms which were diminished by ceasing abrupt movements. The comments of Professor V.I. Yazdovskiy are quoted twice. There are 5 figures.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences, USSR)

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